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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,854	08/26/2003	Fredrick W. Trafton	TI-35749	2827
23494	7590	01/27/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			LAXTON, GARY L	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/646,854	TRAFTON ET AL.	
	Examiner	Art Unit	
	Gary L. Laxton	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-10 and 14-19 is/are allowed.
- 6) ☒ Claim(s) 1-4, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-4, 11 and 12 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda et al (US 6,489,756).

Claims 1 and 11; Kanouda et al discloses a circuit, comprising: a plurality of terminals including at least one output terminal (output terminals of drive ckt 14) and at least one input terminal (input to control 52 or input to element 7); and a configurable voltage regulator (figure 1) operable in a first mode (linear) or a second mode (switching), comprising: output driver circuitry (14), control circuitry (7, 9, 10, 11, 12, 13, 52), having an output (13) coupled to the output driver circuitry (14), and including a plurality of elements; configuration circuitry (52), for receiving a configuration signal (51) ; and at least one configuration switch (12a or 12b), for

selectably coupling elements of feedback circuitry (9, 10a, 10b or 11) to the output driver circuitry (through 13) responsive to control signals from the configuration circuitry (52).

However, Kanouda et al do not disclose the circuit being integrated. It has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove works*, 150 U.S. 164 (1893). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the circuit of Kanouda et al integrated in order to simplify circuit design, reduce manufacturing costs and reduce the overall size of the power supply.

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda et al (US 6,489,756) in view of Esteves et al (US 6,724,174).

Claim 2; Kanouda et al discloses the claimed subject matter in regards to claim 1 supra, except for the configuration circuitry comprises: a configuration amplifier, having a first input connected to the input terminal, and having a second input connected to a reference voltage, the configuration amplifier having an output coupled to the at least one configuration switch.

Esteves et al teaches configuration circuitry comprising a configuration amplifier (261), having a first input connected to an input terminal, and having a second input connected to a reference voltage (V_{th}), the configuration amplifier having an output coupled to the at least one configuration switch (266).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Kanouda et al to include configuration circuitry that comprises a configuration amplifier, having a first input connected to the input terminal, and

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having a second input connected to a reference voltage, the configuration amplifier having an output coupled to the at least one configuration switch to change modes of operation as taught by Esteves et al.

Claim 3; Kanouda et al discloses the claimed subject matter in regards to claim 1 supra, except for wherein the at least one configuration switch is in the first position responsive to a voltage at the input terminal being above the reference voltage and is in the second position responsive to a voltage at the input terminal being below the reference voltage.

Esteves et al teaches Esteves et al teaches configuration circuitry comprising a configuration amplifier (261), having a first input connected to an input terminal, and having a second input connected to a reference voltage (V_{th}), comprising a configuration amplifier (261), having a first input connected to an input terminal, and having a second input connected to a reference voltage (V_{th}), and wherein the configuration circuitry is responsive to a voltage at the input terminal being above the reference voltage and is responsive to a voltage at the input terminal being below the reference voltage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the circuit of Kanouda et al to include configuration circuitry with the at least one configuration switch in the first position and being responsive to a voltage at the input terminal being above a reference voltage and is in a second position and responsive to a voltage at the input terminal being below the reference voltage as suggested by Esteves et al in order to change modes based on a threshold voltage as taught by Esteves et al.

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5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda et al (US 6,489,756) in view of Basso et al (US 6,452,368).

Kanouda et al discloses the claimed subject matter in regards to claim 1 supra, except for wherein the configuration circuitry comprises a writable configuration register, coupled to the at least one configuration switch, for receiving and storing configuration data indicating the selected mode.

Basso et al teaches using a microcontroller to control the mode selection. Microcontrollers inherently comprise memory (ROM and RAM) (i.e. writable register) and receive and store data.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize configuration circuitry that comprises a writable configuration register, coupled to the at least one configuration switch, for receiving and storing configuration data indicating the selected mode in order to program the operating characteristics of the power supply and to utilize computer control to increase power conversion efficiency as taught by Basso et al.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanouda et al (US) in view of Matsuyama (US 5,969,512).

Kanouda et al discloses the claimed subject matter in regards to claim 1 supra, except for a second voltage regulator, having an output coupled to a second output terminal, for generating a negative polarity regulated voltage.

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Matsuyama teaches coupling two regulators together and wherein the second regulator, has an output coupled to a second output terminal, for generating a negative polarity regulated voltage.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to couple two regulators together wherein the second regulator, has an output coupled to a second output terminal, for generating a negative polarity regulated voltage as suggested by Matsuyama in order to provide multiple voltages to a load that demands more than one voltage.

Allowable Subject Matter

7. Claims 5-10 and 14-19 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter: the reasons for indicating allowable subject matter are the same as stated in the previous office action dated 7/29/04.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

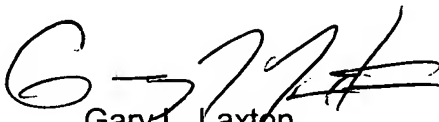
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 1/24/05
Gary L. Laxton
Patent Examiner
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